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RD-26408-5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John Frederick Ackerman et al. :
Serial No.: 10/632,741 : Art Unit: 1746
Filed: August 1, 2003 : Examiner: Joseph L. Perrin
For: APPARATUS FOR WASHING GAS :
TURBINE ENGINES :

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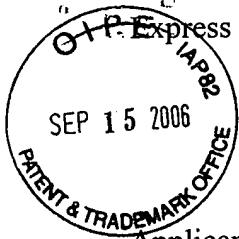
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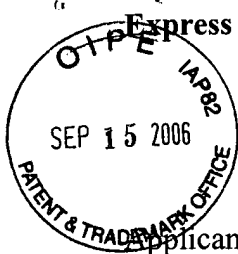
**RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF AND
EXAMINER INTERVIEW**

Mail Stop: Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

The Notice of Appeal in this Application was filed on February 10, 2006. An Appellant's Brief was filed on April 17, 2006. This Supplemental Appeal Brief is being submitted in response to the Examiner Interview on September 14, 2006.

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Express Mail No. EV829958461US

RE-26408-5 (12729-352)
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John Frederick Ackerman et al. :
: Art Unit: 1746
Serial No.: 10/632,741 :
: Examiner: Joseph L. Perrin
Filed: August 1, 2003 :
:
For: APPARATUS FOR WASHING :
GAS TURBINE ENGINES :

SUPPLEMENTAL APPEAL BRIEF

Mail Stop: Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

The Notice of Appeal in this Application was filed on February 10, 2006. An Appellant's Brief was filed on April 17, 2006.

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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the General Electric Company, a New York corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences which will directly affect, or be directly affected by, or have a bearing on, the decision in this pending appeal.

III. STATUS OF CLAIMS

Nine (9) claims, in total, are in this application. Claims 6, 7, 9-12, and 14-16 are pending. Claims 6, 7, 9-12, and 14-16 stand rejected. Claims 6, 7, 9-12, and 14-16 are on appeal.

IV. STATUS OF AMENDMENTS

A Final Office Action was issued August 10, 2005 by the Examiner in response to Applicants' Amendment filed June 6, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary correlates claim elements to specific embodiments described in the application specification. The following summary is not intended to limit in any manner whatsoever the scope of the claims, nor provide an interpretation of the claims. Rather, the following summary is provided only to facilitate the Board's understanding of the subject matter of this appeal.

Briefly, the present invention relates to a washing system for reducing formation of particulate matter within a gas turbine engine. In one embodiment, a washing system 42 includes a plurality of spray nozzles 44, a pump 48, and a reservoir 50 in flow communication with nozzles 44. In operation, reservoir 50 is filled with a first liquid, such as water, a water-based detergent, a water-based cleaning solution, and/or a water-based surfactant. Using system 42, the first liquid is injected into a gas turbine engine 10 to remove soiling and particulate matter from engine 10. Engine 10 is then operated to remove residual first liquid. Reservoir 50 is drained of the first liquid and then filled with a second liquid. The second liquid is then injected into engine 10 to coat at least a portion of engine 10 and thereby facilitate reducing a rate of formation of particulate matter within engine 10. More specifically, the second liquid facilitates suppressing an attraction of electrostatically-attracted particles to portions of engine 10, for example compressor blades. In one embodiment, the second liquid is a water soluble, anti-static liquid.

More specifically, the invention is defined claim-by-claim as set forth below.

A. Claim 6

Independent Claim 6 recites apparatus for a gas turbine engine, (*See Specification at page 3, lines 3-8*)

wherein said apparatus comprises a washing system comprising a pump in flow communication with at least one nozzle, (*See Specification at page 3, lines 7-11*)

a first fluid contained within a first reservoir, (*See Specification at page 3, lines 19-21*)

a second fluid contained within one of the first reservoir and a second reservoir, (*See* Specification at page 4, lines 12-16)

said washing system configured to inject said first fluid and said second fluid into the gas turbine engine, (*See* Specification at page 3, line 19-page 4, line 23)

wherein one of said first and second fluids comprises an anti-static liquid facilitates reducing a rate of formation of particulate matter within the gas turbine engine. (*See* Specification at page 4, line 19-page 5, line 2.)

B. Claim 7

Claim 7 depends from Claim 6 and further recites wherein one of said first and second fluids comprises a water-based cleaning solution. (*See* Specification at page 3, lines 23-25.)

C. Claim 9

Claim 9 depends from Claim 6 and further recites wherein said first fluid comprises an anti-static liquid, and said washing system is further configured to inject said second fluid before said first fluid has been injected into the engine. (*See* Specification at page 4, line 24-page 5, line 2; and at page 4, lines 5-16.)

D. Claim 10

Claim 10 depends from Claim 9 and further recites wherein said washing system further configured to inject said first fluid into the gas turbine engine after said second fluid has been injected into the engine and the engine has been operated. (*See* Specification at page 4, line 24-page 5, line 2; and at page 4, lines 5-16.)

E. Claim 11

Claim 11 depends from Claim 6 and further recites wherein the gas turbine engine includes a compressor, said first fluid comprises an anti-static liquid, and said washing system is further configured to coat the compressor with said first fluid. (*See* Specification at page 4, line 19-page 5, line 2)

F. Claim 12

Independent Claim 12 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, (*See Specification at page 3, lines 5-7*)

the gas turbine engine including a compressor, (*See Specification at page 2, lines 17-21*)

said washing system comprising: a first fluid contained within a first reservoir, (*See Specification at page 3, lines 19-21*)

a second fluid contained within one of the first reservoir and a second reservoir, (*See Specification at page 4, lines 12-16*)

a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, (*See Specification at page 3, lines 7-11, and lines 21-23; and at page 4, lines 12-13*)

wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine. (*See Specification at page 4, line 19-page 5, line 2.*)

G. Claim 14

Independent Claim 14 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, (*See Specification at page 3, lines 5-7*)

the gas turbine engine including a compressor, (*See Specification at page 2, lines 17-21*)

said washing system comprising: a first fluid contained within a first reservoir, (*See Specification at page 3, lines 19-21*)

a second fluid contained within one of the first reservoir and a second reservoir, (*See Specification at page 4, lines 12-16*)

a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, (*See Specification at page 3, lines 7-11, and lines 21-23; and at page 4, lines 12-13*)

wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid configured to coat at least a portion of the engine to reduce electrostatic attraction within the gas turbine engine. (*See Specification at page 4, line 19-page 5, line 2.*)

H. Claim 15

Independent Claim 15 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, (*See Specification at page 3, lines 5-7*)

the gas turbine engine including a compressor, (*See Specification at page 2, lines 17-21*)

said washing system comprising: a first fluid contained within a first reservoir, (*See Specification at page 3, lines 19-21*)

a second fluid contained within one of the first reservoir and a second reservoir, (*See Specification at page 4, lines 12-16*)

a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, (*See Specification at page 3, lines 7-11, and lines 21-23; and at page 4, lines 12-13*)

wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after particulate matter has been removed from the engine. (*See Specification at page 4, line 5-page 5, line 2.*)

I. Claim 16

Independent Claim 16 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, (*See Specification at page 3, lines 5-7*)

the gas turbine engine including a compressor, (*See Specification at page 2, lines 17-21*)

said washing system comprising: a first fluid contained within a first reservoir, (*See Specification at page 3, lines 19-21*)

a second fluid contained within one of the first reservoir and a second reservoir, (*See Specification at page 4, lines 12-16*)

a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, (*See Specification at page 3, lines 7-11, and lines 21-23; and at page 4, lines 12-13*)

wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after the engine has been operated. (*See Specification at page 4, line 5-page 5, line 2.*)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 112, first paragraph.

B. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 112, first paragraph.

C. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,713,120 (Hodgens).

D. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,059,123 (Bartos).

VII. ARGUMENT

Applicants respectfully submit that each pending claim in the present application is definite, contains subject matter which is described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention, and is patentable over the cited art. Accordingly, Applicants respectfully traverse the rejections of the pending claims, and requests that the final rejection be withdrawn and that the pending claims be allowed. In support of these requests, a discussion regarding the patentability of the claimed recitations is set forth below.

A. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 112, first paragraph.

The following discussion sets forth the Section 112, first paragraph, rejection against Claims 6, 7, 9-12, and 14-16 and summarizes current and applicable law with respect to enablement.

1. The Cited Rejection

In the Office Action dated August 10, 2005, and made final, Claims 6, 7, 9-12, and 14-16 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

2. Applicable Law With Respect To Enablement

Section 112, in pertinent part provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

As is well established, the first paragraph of 35 U.S.C. 112 sets forth the minimum requirements for the quality and quantity of information that must be contained in the patent to

justify the grant. The patentee must disclose in the patent sufficient information to put the public in possession of the invention and to enable those skilled in the art to make and use the invention. The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988)

3. The Section 112, First Paragraph Rejection Of Claims 6, 7, 9-12, and 14-16 Is Not A Proper Rejection.

Applicants respectfully submit that the Section 112, first paragraph rejection of Claims 6, 7, 9-12, and 14-16 is not a proper rejection because Claims 6, 7, 9-12, and 14-16 satisfy the requirements of Section 112.

Applicants respectfully submit that the specification satisfies the requirements of Section 112, first paragraph. More specifically, Applicants respectfully submit that the disclosure, including the Figures, would enable one skilled in the art to make and/or use the invention with only a modicum of study. The Federal Circuit has opined in *Verve LLC v. Crane Cams, Inc.*, 65 USPQ 2d 1051, 1053-1054 (Fed. Cir. 2002), that “[p]atent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practitioners, lest every patent be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field.”

In the present case, Applicants respectfully submit that the specification is complete and that one skilled in the art would understand the present invention, including a first fluid being an anti-static fluid, after reading the specification, in view of the Figures. In contrast to the assertion on page 6 of the Final Office Action that “applicant’s original disclosure is not enabled for a first fluid being an anti-static fluid”, Applicants respectfully submit that it does not matter which fluid is referred to as a first and/or a second fluid, but rather that an anti-static fluid and/or a water-based cleaning solution may each be considered to be a first and/or the second fluid. Accordingly, Applicants respectfully submit that a first fluid being an anti-static fluid is described in sufficient detail that would be understood by one skilled in the art after reading the specification in light of the Figures. Moreover, the Final Office Action does not show that one

skilled in the art of gas turbine engine washing systems would not be able to make and use the claimed invention without resorting to undue experimentation. Accordingly, Applicants respectfully submit that Claims 6, 7, 9-12, and 14-16 satisfy the requirements of Section 112, first paragraph.

For at least the reasons set forth above, Applicants respectfully request that the Section 112, first paragraph, rejection of Claims 6, 7, 9-12, and 14-16 be withdrawn.

B. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 112, first paragraph.

The following discussion sets forth the Section 112, first paragraph, rejection against Claims 6, 7, 9-12, and 14-16 and summarizes current and applicable law with respect to enablement.

1. The Cited Rejection

In the Office Action dated August 10, 2005, and made final, Claims 6, 7, 9-12, and 14-16 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

2. Applicable Law With Respect To Enablement

Section 112, in pertinent part provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

As is well established, the first paragraph of 35 U.S.C. 112 sets forth the minimum requirements for the quality and quantity of information that must be contained in the patent to justify the grant. The patentee must disclose in the patent sufficient information to put the public in possession of the invention and to enable those skilled in the art to make and use the invention. The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art

without undue experimentation. *United States v. Teletronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988)

3. The Section 112, First Paragraph Rejection Of Claims 6, 7, 9-12, and 14-16 Is Not A Proper Rejection.

Applicants respectfully submit that the Section 112, first paragraph rejection of Claims 6, 7, 9-12, and 14-16 is not a proper rejection because Claims 6, 7, 9-12, and 14-16 satisfy the requirements of Section 112.

Applicants respectfully submit that the specification satisfies the requirements of Section 112, first paragraph. More specifically, Applicants respectfully submit that the disclosure, including the Figures, would enable one skilled in the art to make and/or use the invention with only a modicum of study. The Federal Circuit has opined in *Verve LLC v. Crane Cams, Inc.*, 65 USPQ 2d 1051, 1053-1054 (Fed. Cir. 2002), that “[p]atent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practitioners, lest every patent be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field.”

In the present case, Applicants respectfully submit that the specification is complete and that one skilled in the art would understand the present invention, including an anti-static fluid, after reading the specification, in view of the Figures. On page 6 of the Final Office Action, it was asserted that “[t]he different species of liquids defining ‘anti-static’ critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure.” Specifically, the Examiner argues that:

the specification does not provide guidance with respect to any working examples (species) of anti-static liquids. Furthermore, the specification fails to provide guidance as to how to obtain such measurements for anti-static properties so as to define the meets and bounds of patent protection sought, apparently attempting to improperly incorporate by reference such anti-static liquids as commercially available. What liquids constitute an ‘anti-static liquid’? Without such information on what species of liquids fall within the scope of applicant’s broad ‘anti-static liquid’, one of ordinary skill in the art could not predict which liquids out of the

vast number of known liquids would have anti-static properties and, accordingly, one of ordinary skill in the art would be required to perform undue experimentation to identify whether a liquid would have 'anti-static properties even though no threshold (i.e. 'anti-static' measurement and/or range) is disclosed. Therefore, one skilled in the art could not make and/or use the invention.

However, page 4 of the Applicants' specification, for example, states that "the second liquid coats compressor blades (now shown) within compressor assembly 14 to facilitate suppressing an attraction of electrostatically-attracted particles to the compressor blades." Additionally, page 5 of the specification, for example, recites that "the anti-static coating applied to the compressor blades facilitates suppressing electrostatic attraction of the blades" and "[a]ccordingly, particles dependent on electrostatic attraction for attachment to the compressor blades are neutralized and flow through the engine, thus reducing a rate of formation of particulate matter within the engine." Applicants therefore respectfully submit that one skilled in the art would not need to perform undue experimentation to determine what constitutes an anti-static liquid, but rather could duplicate the invention using any liquid that neutralizes particles dependent upon electrostatic attraction. Moreover, in contrast to the assertion that the specification "does not provide guidance with respect to any working examples (species) of anti-static liquids", the specification recites at pages 4 and 5, for example, that "[i]n one embodiment, the second liquid is a water-soluble, anti-static liquid, such as an anti-static agent commercially available from Dongnam Chemical Industries, Ltd., Inchon, Korea." Applicants' specification therefore provides an example of a liquid that falls within the scope of anti-static liquid. For example, a quick search of Dongnam Chemical Industries, Ltd.'s website (<http://www.dongnamchem.com/eng/index.php3>) revealed numerous anti-static agents. Accordingly, Applicants respectfully submit that Claims 6, 7, 9-12, and 14-16 satisfy the requirements of Section 112, first paragraph.

For at least the reasons set forth above, Applicants respectfully request that the Section 112, first paragraph, rejection of Claims 6, 7, 9-12, and 14-16 be withdrawn.

C. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 4,713,120 (Hodgens)

The following discussion sets forth the Section 102 rejection cited against the pending claims and summarizes current and applicable law with respect to obviousness. In addition, a discussion of the rejection with respect to each pending claim, in view of current and applicable law, is provided. A claim-by-claim analysis of the pending claims also is set forth.

1. The Cited Rejections

In the Office Action dated August 10, 2005, and made final, Claims 6, 7, 9-12, and 14-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hodgens.

2. Applicable Law With Respect To Patentability

Section 102, in pertinent part provides:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States

As explained by the Federal Circuit, to satisfy the requirements of Section 102(b), which is generally referred to as “anticipation”, each and every element of the claimed invention must be disclosed in a single prior art reference or embodied in a single prior art device. *Verdegaal Brothers Inc. v. Union Oil Company of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

3. The Section 102 Rejection Of Claims 6, 7, 9-12, and 14-16 Is Not A Proper Rejection

Applicants respectfully submit that the Section 102(b) rejection of presently pending Claims 6, 7, 9-12, and 14-16 is not a proper rejection. Specifically, Hodgens does not describe each and every recitation of Claims 6, 7, 9-12, and 14-16. For these reasons, Applicants respectfully request that the Section 102(b) rejection be withdrawn, and respectfully traverse the rejection of Claims 6, 7, 9-12, and 14-16 under U.S.C. § 102(b) as being anticipated by Hodgens.

Hodgens describes a composition and method for removing deposits (10) from internal components (24) of a gas turbine engine (18). Specifically, Hodgens, II et al. describe inserting a

spray probe 20 through a boroscope port 21 to inject two solutions into engine (18). A first solution is a cleaning composition (15) formed from an aqueous solution, and is injected into the flowpath to loosen deposits (10) formed along the flowpath within engine (18). A second solution is a rinse solution (16) that is injected into engine (18) to facilitate removing both the cleaning composition (15) and loosened deposits. Notably, Hodgens, II et al. **do not utilize an anti-static liquid** to reduce a rate of formation of particulate matter within the gas turbine engine.

Claim 6 recites an apparatus for a gas turbine engine comprising “a washing system comprising a pump in flow communication with at least one nozzle, a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second, said washing system configured to inject said first fluid and said second fluid into the gas turbine engine, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing a rate of formation of particulate matter within the gas turbine engine.”

Hodgens does not describe nor suggest an apparatus for a gas turbine engine including a washing system that includes an anti-static liquid. Rather, Hodgens describes a composition and method for removing deposits from a gas turbine engine, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Hodgens.

Claim 7 depends from independent Claim 6 and further recites “wherein one of said first and second fluids comprises a water-based cleaning solution.” Applicants submit that when the recitations of Claim 7 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Hodgens, and accordingly, Applicants submit that dependent Claim 7 is patentable over Hodgens.

Claim 9 depends from independent Claim 6 and further recites “wherein said first fluid comprises an anti-static liquid, and said washing system is further configured to inject said second fluid before said first fluid has been injected into the engine.” Applicants submit that when the recitations of Claim 9 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Hodgens, and accordingly, Applicants submit that dependent Claim 9 is patentable over Hodgens.

Claim 10 depends indirectly from independent Claim 6 and further recites “wherein said washing system further configured to inject said first fluid into the gas turbine engine after said second fluid has been injected into the engine and the engine has been operated.” Applicants submit that when the recitations of Claim 10 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Hodgens, and accordingly, Applicants submit that dependent Claim 10 is patentable over Hodgens.

Claim 11 depends from independent Claim 6 and further recites “wherein the gas turbine engine includes a compressor, said first fluid comprises an anti-static liquid, and said washing system is further configured to coat the compressor with said first fluid.” Applicants submit that when the recitations of Claim 11 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Hodgens, and accordingly, Applicants submit that dependent Claim 11 is patentable over Hodgens.

Claim 12 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine.”

Hodgens does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Hodgens describes a composition and method for removing deposits from a gas turbine engine, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 12 is submitted to be patentable over Hodgens.

Claim 14 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at

least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid configured to coat at least a portion of the engine to reduce electrostatic attraction within the gas turbine engine.”

Hodgens does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Hodgens describes a composition and method for removing deposits from a gas turbine engine, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 14 is submitted to be patentable over Hodgens.

Claim 15 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after particulate matter has been removed from the engine.”

Hodgens does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Hodgens describes a composition and method for removing deposits from a gas turbine engine, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Hodgens.

Claim 16 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said

the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after the engine has been operated.”

Hodgens does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Hodgens describes a composition and method for removing deposits from a gas turbine engine, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 16 is submitted to be patentable over Hodgens.

For at least the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 6, 7, 9-12, and 14-16 as being anticipated by Hodgens be withdrawn.

D. The rejection of Claims 6, 7, 9-12, and 14-16 under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 4,059,123 (Bartos)

The following discussion sets forth the Section 102 rejection cited against the pending claims and summarizes current and applicable law with respect to obviousness. In addition, a discussion of the rejection with respect to each pending claim, in view of current and applicable law, is provided. A claim-by-claim analysis of the pending claims also is set forth.

1. The Cited Rejections

In the Office Action dated August 10, 2005, and made final, Claims 6, 7, 9-12, and 14-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Bartos.

2. Applicable Law With Respect To Patentability

Section 102, in pertinent part provides:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States

As explained by the Federal Circuit, to satisfy the requirements of Section 102(b), which is generally referred to as “anticipation”, each and every element of the claimed invention must be disclosed in a single prior art reference or embodied in a single prior art device. *Verdegaal Brothers Inc. v. Union Oil Company of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

3. The Section 102 Rejection Of Claims 6, 7, 9-12, and 14-16 Is Not A Proper Rejection

Applicants respectfully submit that the Section 102(b) rejection of presently pending Claims 6, 7, 9-12, and 14-16 is not a proper rejection. Specifically, Hodgens does not describe each and every recitation in Claims 6, 7, 9-12, and 14-16. For these reasons, Applicants respectfully request that the Section 102(b) rejection be withdrawn, and respectfully traverse the rejection of Claims 6, 7, 9-12, and 14-16 under U.S.C. § 102(b) as being anticipated by Hodgens.

Bartos, et al. describe a self-contained turbine engine cleaning and preservation unit 10. Unit 10 includes a water reservoir 18, a preservative reservoir 20, and a solvent reservoir 24. Solvent reservoir 24 contains a cleaning solution, and preservative reservoir 20 contains a preservation solution for protecting engine components from rust.

Claim 6 recites an apparatus for a gas turbine engine comprising “a washing system comprising a pump in flow communication with at least one nozzle, a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second, said washing system configured to inject said first fluid and said second fluid into the gas turbine engine, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing a rate of formation of particulate matter within the gas turbine engine.”

Bartos does not describe nor suggest an apparatus for a gas turbine engine including a washing system that includes an anti-static liquid. Rather, Bartos describes a self-contained turbine engine cleaning and preservation unit, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Bartos.

Claim 7 depends from independent Claim 6 and further recites “wherein one of said first and second fluids comprises a water-based cleaning solution.” Applicants submit that when the recitations of Claim 7 are considered in combination with the recitations of Claim 6, the recited

apparatus is not taught nor suggested by Bartos, and accordingly, Applicants submit that dependent Claim 7 is patentable over Bartos.

Claim 9 depends from independent Claim 6 and further recites “wherein said first fluid comprises an anti-static liquid, and said washing system is further configured to inject said second fluid before said first fluid has been injected into the engine.” Applicants submit that when the recitations of Claim 9 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Bartos, and accordingly, Applicants submit that dependent Claim 9 is patentable over Bartos.

Claim 10 depends indirectly from independent Claim 6 and further recites “wherein said washing system further configured to inject said first fluid into the gas turbine engine after said second fluid has been injected into the engine and the engine has been operated.” Applicants submit that when the recitations of Claim 10 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Bartos, and accordingly, Applicants submit that dependent Claim 10 is patentable over Bartos.

Claim 11 depends from independent Claim 6 and further recites “wherein the gas turbine engine includes a compressor, said first fluid comprises an anti-static liquid, and said washing system is further configured to coat the compressor with said first fluid.” Applicants submit that when the recitations of Claim 11 are considered in combination with the recitations of Claim 6, the recited apparatus is not taught nor suggested by Bartos, and accordingly, Applicants submit that dependent Claim 11 is patentable over Bartos.

Claim 12 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine.”

Bartos does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Bartos describes a self-contained turbine engine cleaning and preservation unit, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 12 is submitted to be patentable over Bartos.

Claim 14 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid configured to coat at least a portion of the engine to reduce electrostatic attraction within the gas turbine engine.”

Bartos does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Bartos describes a self-contained turbine engine cleaning and preservation unit, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 14 is submitted to be patentable over Bartos.

Claim 15 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: “a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after particulate matter has been removed from the engine.”

Bartos does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Bartos describes a self-contained turbine engine cleaning and

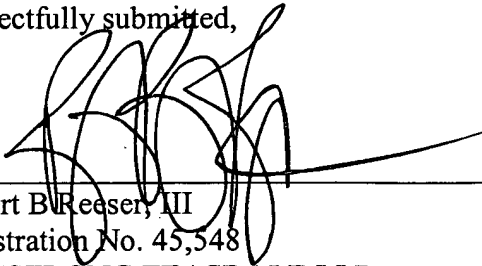
preservation unit, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Bartos.

Claim 16 recites a gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, wherein the washing system comprises: "a first fluid contained within a first reservoir, a second fluid contained within one of the first and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids comprises an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after the engine has been operated."

Bartos does not describe nor suggest a gas turbine engine washing system that includes an anti-static liquid. Rather, Bartos describes a self-contained turbine engine cleaning and preservation unit, but does not describe or suggest an anti-static liquid. Accordingly, for at least the reasons set forth above, Claim 16 is submitted to be patentable over Bartos.

For at least the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 6, 7, 9-12, and 14-16 as being anticipated by Bartos be withdrawn.

Respectfully submitted,



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VIII. CLAIMS APPENDIX

6. Apparatus for a gas turbine engine, said apparatus comprising a washing system comprising a pump in flow communication with at least one nozzle, a first fluid contained within a first reservoir, a second fluid contained within one of the first reservoir and a second reservoir, said washing system configured to inject said first fluid and said second fluid into the gas turbine engine, wherein one of said first and second fluids comprises an anti-static liquid facilitates reducing a rate of formation of particulate matter within the gas turbine engine.

7. Apparatus in accordance with Claim 6 wherein one of said first and second fluids comprises a water-based cleaning solution.

9. Apparatus in accordance with Claim 6 wherein said first fluid comprises an anti-static liquid, and said washing system is further configured to inject said second fluid before said first fluid has been injected into the engine.

10. Apparatus in accordance with Claim 9 wherein said washing system further configured to inject said first fluid into the gas turbine engine after said second fluid has been injected into the engine and the engine has been operated.

11. Apparatus in accordance with Claim 6 wherein the gas turbine engine includes a compressor, said first fluid comprises an anti-static liquid, and said washing system is further configured to coat the compressor with said first fluid.

12. A gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, said washing system comprising: a first fluid contained within a first reservoir, a second fluid contained within one of the first reservoir and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine.

14. A gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, said washing system comprising: a first fluid contained within a first reservoir, a second fluid contained within one of the first reservoir and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid configured to coat at least a portion of the engine to reduce electrostatic attraction within the gas turbine engine.

15. A gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, said washing system comprising: a first fluid contained within a first reservoir, a second fluid contained within one of the first reservoir and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after particulate matter has been removed from the engine.

16. A gas turbine engine washing system configured to reduce particulate matter within the gas turbine engine, the gas turbine engine including a compressor, said washing system comprising: a first fluid contained within a first reservoir, a second fluid contained within one of the first reservoir and a second reservoir, a nozzle in flow communication with at least one of said first and second reservoirs and for injecting said first and second fluids into said the gas turbine engine upstream from said compressor, wherein one of said first and second fluids is an anti-static liquid that facilitates reducing electrostatic attraction within the gas turbine engine, said first fluid comprises an anti-static liquid that is injected into the engine after the engine has been operated.

IX. EVIDENCE APPENDIX

There is no evidence being submitted pursuant to 37 CFR §§ 1.130, 1.131, or 1.132, or of any other evidence entered by the examiner and relied upon by appellant in the appeal, and there is no statement being submitted setting forth where in the record that evidence was entered in the record by the examiner.

X. RELATED PROCEEDINGS APPENDIX

There are no related proceedings which will directly affect, or be directly affected by, or have a bearing on, the decision in this pending appeal.